Remarks/Arguments

Reconsideration of the above-identified application in view of the present amendment is respectfully requested.

Below is a discussion of the 35 U.S.C. §112, second paragraph, rejection of claims 1-3, 5-6, 8-9, 12-13, 17-20, 23-34, and 36, the 35 U.S.C. §112, first paragraph, rejection of claims 1-3, 5-6, 8-9, 12-13, 17-20, 23-34, and 36, the 35 U.S.C. §102(a) rejection of claims 1-2 and 5-6, and the 35 U.S.C. §103(a) rejection of claims 1-3, 5-6, 8-9, 12, 17-20, 23, 25-34 and 36.

1. **35 U.S.C. §112, second paragraph, rejection of claims 1-3, 5-6, 8-9, 12-13, 17-20, 23-34 and 36.**

Claims 1-3, 5-6, 8-9, 12-13, 17-20, 23-34, and 36 were rejected under 35 U.S.C. §112, second paragraph, as failing to particularly point out and distinctly claim the subject matter which Applicants regard as their invention. The Office Action argues that claims 1-3, 17-18, 29-34, and 36 do not recite specific, active steps and that claims 5-6, 8-9, 12-13, 19-20, and 23-28 do not recite the subject or the location of administration.

Claims 1, 17, 29, and 31 recite specific, active steps. Claims 1, 17, and 29 recite the positive step of "inhibiting," and claim 31 recites the positive steps of "reducing" or "promoting." Each of these claims recites an active step; that is, each step of these claims is written in verb tense. In the case of *Ex parte Porter*, 25 USPQ2d 1144 (Bd. Pat. App. & Inter. 1992), for example, the Board held that a claim which clearly recited the step of "utilizing" was not indefinite under 35 U.S.C. §112,

second paragraph (MPEP 2173.05(q)). Accordingly, Applicants respectively submit that claims 1, 17, 29, and 31 recite specific, active steps.

Claims 1, 17, 29, and 31 are also specific or definite enough to particularly point out and distinctly claim the subject matter which Applicants regard as their invention. According to MPEP 2173.02, the essential inquiry pertaining to the definiteness requirement of 35 U.S.C. §112, second paragraph, is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of: (a) the content of the particular application disclosure; (b) the teachings of the prior art; and (c) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made (MPEP 2173.02).

The content of the present Application makes clear what subject matter claims 1, 17, 29, and 31 encompass. For example, the present Application discloses agents (¶86) and methods (¶¶192-233) for inhibiting expression and/or activity of a primary proteoglycan, a chain initiating enzyme, and/or a chain elongation enzyme. Additionally, the present Application discloses methods for screening agents (¶ 244-278) to identify and/or characterize agents capable of inhibiting the expression of a primary proteoglycan, inhibiting the expression and/or activity of a chain initiating enzyme, inhibiting the expression and/or activity of a chain elongation enzyme, promoting neural regeneration, reducing scar formation, and/or promoting inter-mixing of Schwann cells and astrocytes.

The teachings of the prior art also make clear what subject matter claims 1, 17, 29, and 31 encompass. For example, the present Application discloses that glial scar tissue is comprised, in part, of GAG-modified proteoglycans (¶2), that GAG-modified proteoglycans have been shown to exert an inhibitory effect on regenerating neurons (¶3), and that there is a need for methods and compositions that reduce glial scar formation following neuronal injury or disease and/or reduce GAG-modified proteoglycan content in neuronal tissue following injury or disease (¶4).

In view of the content of the present Application and the teachings of the prior art, one possessing the ordinary level of skill in the pertinent art at the time the invention was made would have been able to interpret with a reasonable degree of precision and particularity the subject matter encompassed by claims 1, 17, 29, and 31. Accordingly, Applicants submit that claims 1, 17, 29, and 31 recite specific, active steps and respectfully request that the 35 U.S.C. §112, second paragraph, rejection of these claims be withdrawn. Because claims 2-3, 18, 30, 32-34, and 36 depend either directly or indirectly from claims 1, 17, 29, and 31, Applicants respectively request that the 35 U.S.C. §112, second paragraph, rejection of these claims also be withdrawn.

Claims 5-6, 8-9, 12-13, 19-20, and 23-28 recite different agents capable of inhibiting the expression and/or activity of a primary proteoglycan, a chain initiation enzyme, and/or a chain elongation enzyme. There is no requirement in the MPEP (or elsewhere) that a claim or claims which include an agent capable of being administered must also recite the subject and location of administration. One

possessing the ordinary level of skill in the pertinent art at the time the invention was made would have understood that the agents of the present Application could be administered to both human and non-human subjects at any known location (¶¶115-116). Accordingly, Applicants respectively request that the 35 U.S.C. §112, second paragraph, rejection of claims 5-6, 8-9, 12-13, 19-20, and 23-28 be withdrawn.

2. **35 U.S.C. §112, first paragraph, rejection of claims 1-3, 5-6, 8-9, 12-13, 17-20, 23-34 and 36.**

Claims 1-3, 5-6, 8-9, 12-13, 17-20, 23-34, and 36 were rejected under 35 U.S.C. §112, first paragraph, as being non-enabling for a method of reducing GAG content in a glial scar, promoting neuronal regeneration, and screening agents. The Office Action argues that the present Application, while being enabling for *in vitro* methods of reducing GAG content in a glial scar, promoting neuronal regeneration, and screening agents, does not reasonably provide enablement for corresponding *in vivo* methods. Additionally, the Office Action argues that the present Application, while being enabling for intrathecal and topical administration, does not reasonably provide enablement for other methods of administration.

Claims 1 and 17 are enabled for *in vivo* methods of reducing GAG content in a glial scar, promoting neuronal regeneration, and screening agents. The Office Action concedes that "Example 8 describes *in vivo* administration to spinal injuries in mice of Xylotransferase (XT-I) DNA enzyme via intrathecal administration using an osmotic minipump," and that "[h]istological analysis of the treated areas indicated some neuroregeneration" (emphasis added). Example 8 thus discloses an *in vivo* method for screening an agent (*i.e.*, an XT-I enzyme) that reduces GAG content *in*

vivo and "promotes neuronal regeneration *in vivo* following an injury to the spinal cord."

Accordingly, Applicants submit that claims 1, 17, 29, and 31 are enabled for *in vivo* methods of reducing GAG content in a glial scar, promoting neuronal regeneration, and screening agents, and respectively request that the 35 U.S.C. §112, first paragraph, rejection of these claims be withdrawn. Additionally, because claims 2-3, 5-6, 8-9, 12-13, 18-20, 23-28, 30, 32-34, and 36 depend either directly or indirectly from claims 1, 17, 29, and 31, Applicants respectively request that the 35 U.S.C. §112, first paragraph, rejection of these claims also be withdrawn.

Claims 1, 17, 29, and 31 are also enabled for routes of administration other than intrathecal and topical administration. The present Application discloses a variety of other routes of administration, including parenteral (¶115) and systemic (¶116) routes. Because one having ordinary skill in the pertinent art at the time the invention was made would have understood that other routes of administration could be used, Applicants submit that claims 1, 17, 29, and 31 are enabled for routes of administration other than intrathecal and topical administration. Accordingly, Applicants respectively request that the 35 U.S.C. §112, first paragraph, rejection of these claims be withdrawn. Additionally, because claims 2-3, 5-6, 8-9, 12-13, 18-20, 23-28, 30, 32-34, and 36 depend either directly or indirectly from claims 1,17, 29, and 31, Applicants respectively request that the 35 U.S.C. §112, first paragraph, rejection of these claims also be withdrawn.

3. **35 U.S.C. §102(a) rejection of claims 1-2 and 5-6.**

Claims 1-2 and 5-6 were rejected under 35 U.S.C. §102(a) as being anticipated by Grimpe *et al.* (*The Journal of Neuroscience*, April 15, 2002, 22(8):3144-3160) (hereinafter, "the Grimpe reference"). Claims 1-2 and 5-6 are patentable over the Grimpe reference because the Grimpe reference discloses the Applicants' own work within one year before the present Application's priority date.

Attached is a 37 C.F.R. 1.132 declaration (hereinafter, "the 132 declaration") from the inventors that indicates: (1) the present Application was filed October 31, 2003; (2) the present Application claims priority from U.S. Provisional Application Serial No. 60/423,082, filed November 1, 2002, and U.S. Provisional Application Serial No. 60/471,447, filed May 16, 2003; (3) the Grimpe reference was received for publication on September 24, 2001 and published April 15, 2002; and (4) the inventors of the present Application are authors of the subject matter listed in the Grimpe reference.

Also attached is a 37 C.F.R. 1.131 declaration (hereinafter, "the 131 declaration") from the inventors that indicates: (1) the present Application was filed October 31, 2003; (2) the present Application claims priority from U.S. Provisional Application Serial No. 60/423,082, filed November 1, 2002, and U.S. Provisional Application Serial No. 60/471,447, filed May 16, 2003; (3) the Grimpe reference was received for publication on September 24, 2001 and published April 15, 2002; (4) the inventors of the present Application are authors of the subject matter listed in the Grimpe reference; and (5) prior to April 11, 2002, the inventors of the present invention had reduced to practice a method of reducing GAG content in a glial scar

comprising inhibiting one or more of the following: inhibiting the expression of primary proteoglycans; inhibiting the expression and/or activity of a chain initiation enzyme; and inhibiting the expression and/or activity of a chain elongation enzyme.

Accordingly, the Grimpe reference is not prior art and withdrawal of the 35 U.S.C. §102(a) rejection of claims 1-2 and 5-6 is respectfully requested.

4. **35 U.S.C. §103(a) rejection of claims 1-3, 5-6, 8-9, 12, 17-20, 23, 25-34 and 36.**

Claims 1-3, 5-6, 8-9, 12, 17-20, 23, 25-34, and 36 were rejected under 35 U.S.C. §103(a) as being obvious over Bradbury *et al.* (*Nature*, April 11, 2002, 416:636-640) (hereinafter, "the Bradbury reference") in view of Santoro *et al.* (*PNAS*, 1997; 94:4262-4266) and further in view of Götting *et al.* (*J. Mol. Biol.*, 2000; 304:517-528) and further in view of Marchetti (*Frontiers in Bioscience*, 2d, 88-125, March 1, 1997).

Claims 1-3, 5-6, 8-9, 12, 17-20, 23, 25-34, and 36 are patentable over the Bradbury reference because the Bradbury reference is not prior art by way of the 131 and 132 declarations. One element needed to establish a *prima facie* case of obviousness is that the prior art reference (or references when combined) must teach or suggest all the limitations of the rejected claim or claims (MPEP 2143). The Office Action relies on the teachings of the Bradbury reference to support the 35 U.S.C. §103(a) rejection of claims 1-3, 5-6, 8-9, 12, 17-20, 23, 25-34 and 36. Because the Bradbury reference is not prior art, all the elements of claims 1, 17, 29, and 31 are not taught or suggested by the combination of references cited in the Office Action. Accordingly, Applicants respectfully request that the 35 U.S.C.

§103(a) rejection of claims 1, 17, 29, and 31 be withdrawn. Additionally, because claims 2-3, 5-6, 8-9, 12-13, 18-20, 23-28, 30, 32-34, and 36 depend either directly or indirectly from claims 1,17, 29, and 31, Applicants respectively request that the 35 U.S.C. §103(a) of these claims also be withdrawn.

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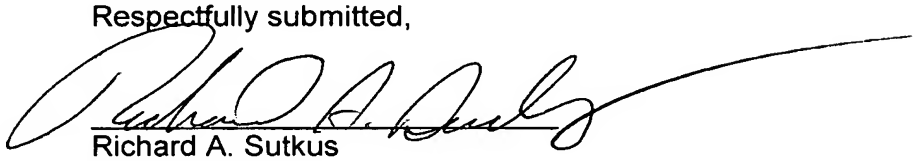
Respectfully submitted,



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